SURF 2008

SUMMER UNDERGRADUATE RESEARCH FELLOWSHIP

Program and Activities

NIST
National Institute of Standards and Technology
U.S. Department of Commerce

NSF

APPENDIX A. QUICK CROSS-REFERENCE – SURF 2008

STUDENT	UNIVERSITY	TALK TITLE	OU
Behm, Nathan	American University	Using Magneto-Optical Trapped Lithium Atoms to Create a Versatile FIB	CNST
Kelleher, Brian	American University	Rate Dependent Magnetization Reversal in Thin Co/Pt Multilayer Films	MSEL/NCNR
Madison, Benjamin	Appalachian State University	Characterization of Femtosecond Laser Frequency Comb and a Micro-Channel Plate (MCP) Detector for High Resolution Atomic Spectroscopy	PL
Durnford, Andrew	California Institute of Technology	Simulating Diffusion from Laser-Excited Gold-Coated Silica Nanoparticles	MSEL/NCNR
Vu, Kennedy-Kiet Tuan	California State University Fresno	Fate and Behavior of TiO_2 Nanoparticles in the Natural Environment	CSTL
Bunker, David	Carnegie Mellon University	Materials Informatics Tools and Crystallographic Databases	MSEL/NCNR
Greer, Benjamin	Carnegie Mellon University	Terahertz Spectroscopy and Modeling of Biological Molecules in Reverse Micelles	PL
Shih, Jennifer	Carnegie Mellon University	SANS-USANS Investigation of Magnetic Nanoparticles Chaining in Polymer Epoxy Nanocomposites	MSEL/NCNR
Devine, Brittany	Centre College	Measuring User Experience in Large Simulated Networks	ITL
Miller, Lauren	Clemson University	Influence of Temperature on the Molecular Conformation in Gold-Monolayer-Semiconductor Structure	EEEL
Anderson, Justin	Colorado School of Mines	Theory of Quantum Corrals on Graphene	PL
Fosu, George	Colorado State University Pueblo	Validation of the SysML Tools and Specifications	MEL
Bolz, Brian	Cornell University	Controlled Electrostatic Deposition of Graphene	CNST
Huang, Eric	Cornell University	Microwave and Radio-Frequency Addressing of Bose-Einstein Condensate	PL
Ligda, Jonathan	Cornell University	Mechanically Exfoliated Graphene	CNST
Wen, Yanan (Henry)	Cornell University	Single Molecule Studies on Membrane Protein Using Hydrosomes and Optical Trapping	PL
Johnson, Joshua	Florida Gulf Coast University	Development of Static and Dynamic Stability Test Standards for a Load Carrying Device	MEL
Nowak, Stephen	Franciscan University Steubenville	Simulating CO Pollution Across the Indoor/Outdoor Interface	BFRL
Naudus, Philip	George Mason University	Gamma-Gamma Coincidence Detection	PL
Forney, Anne Marie	Gettysburg College	Examination of the B3 Dosimeter Temperature-Dose Response Dependence	PL
Rakholia, Akash	Harvey Mudd College	Reverse Monte Carlo Refinements of Local Structure Using Atomic Pair-Distribution Functions and EXAFS	MSEL/NCNR
Cahill, Alex	Haverford College	Refining the Fine Structure Constant: Theoretical Calculations of Fine Structure Splittings in Highly Ionized Atoms	PL
Winogradoff, David	Haverford College	Neutron Optics and the Beam-Stop Problem	MSEL/NCNR
Stauffer, Hilary	Hood College	Combinatorial Pulsed Laser Deposition of Functional Oxides	MSEL/NCNR
Walton, Eric	Hood College	High-Fidelity Simulation Environment for Testing Virtual Robots	MEL

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Abbott, Lauren	Indiana University of Pennsylvania	Quantum Mechanics and the Mystery of Life: Quantifying DNA's Interactions	PL
Juhnke, Bethany	Iowa State University	Assessing Cell Morphology and Adhesion of a Small Library of Tyrosine-Derived Polycarbonates	MSEL/NCNR
Barker, Lydia	James Madison University	Optimizing Standard Addition Design for Minimal Uncertainty	CSTL
Berry, David	James Madison University	Determination of Toxic Metals at Trace Levels in SRM 955c Caprine Blood by Isotope Dilution Inductively Coupled Mass Spectrometry	CSTL
Ng, Tiffany	Johns Hopkins University	Preparation and Characterization of a New Tethered Bilayer Lipid Membrane (TBLM) Model Membrane System	MSEL/NCNR
Schultz, Justin	Juniata College	Development of an Axicon MOT for Rubidium Atoms	PL
Sabol, Joseph	Lehigh University	Microwave Methods Generating CdSe/ZnS Nanostructures	MSEL/NCNR
Schneider, Lisa	Loyola College of Maryland	External Calibration of a Camera and Laser Range Finder	MEL
Ngai, Tammy	Massachusetts Institute of Technology	Standardizing Base Metric Scoring for the National Vulnerabilities Database Operations Team and Other Users of the Common Vulnerabilities Scoring System	ITL
Parker, Beatrice	Massachusetts Institute of Technology	Contributions to the Electronic Kilogram Experiment: Measuring the Acceleration of Gravity and Configuring a Motion Control System	EEEL
Bonnen, Tyler	Miami Dade College	The Morphology of C_{60}/Pentacene Heterojunctions	CSTL
Palacios, Sebastian	Miami Dade College	Interoperability of Building-Related CAD Applications	BFRL
Vega, Jonathan	Miami Dade College	Time-of-Flight Laser Scanners and 3D Modeling	BFRL
Manders, Jesse	Miami University Ohio	An Atom-by-Atom Approach to Alzheimer's: Coordination in Metal-Peptide Complexes	CSTL
Workman, Kevin	Millersville University of Pennsylvania	Using Video Games to Improve Visual Analytical Software for Digital Natives	ITL
Yilma, Semme	Montgomery College	Modeling of a Reinforced Concrete Portal Frame Under Fire	BFRL
Wroge, Christine	Mount Saint Mary's University	ρ-Aminophenyl Phosphoryl Choline Purification of C-Reactive Protein for Development of a Mass Spectral Internal Standard	CSTL
Taylor, Courtney	North Carolina State University	Design of a Detection Calibration System for Use in the Neutron Lifetime Project	PL
Schalch, Jacob	Oberlin College	Understanding Hydrogen Adsorption in Carbon-Templated Zeolites	MSEL/NCNR
Brockett, Adam	Pennsylvania State University	Ontological and User Interface Development for the Urban Search and Rescue Robotics Program	MEL
Chang, Matthew	Pennsylvania State University	An Atom Thick: Graphene Based Quantum Hall Resistance Standard	EEEL
Ebert, Matthew	Pennsylvania State University	Two-Photon Microscopy	PL
Neal, Adam	Pennsylvania State University	Process for In-House Soldering of Printed Circuit Boards	EEEL
Bouis, Craig	Purdue University	Characterization of the UV Degradation of Photocatalytic Nanoparticle-Filled Polymers	BFRL
Gibney, Joseph	Rensselaer Polytechnic Institute	Modeling Holey Fibers	PL

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Kutten, Johannes	Rensselaer Polytechnic Institute	Measuring the Effect of Cytotoxic Compounds Using an Engineered Reporter Cell Line	CSTL
Timmerman, Laura	Rice University	Toward Monodispersity of Single-Walled Carbon Nanotubes via Ultracentrifugation	MSEL/NCNR
Minutillo, Nicholas	Saint Joseph's University	The Silk Purse from the Pig's Ear – Optimization of a Prototype Detector for Large Area Radionuclide Contaminated Urban Material Characterization	PL
Bowers, Patrick	Saint Mary's College of Maryland	2D vs. 3D Measurement of HER2 FISH Bioimaging in a Cell	CSTL
DeSavage, Sara	Saint Mary's College of Maryland	Characterization of a Medical Imaging Camera for Improved Color Contrast of Human Tissues	PL
Mooney, Martin	Saint Mary's College of Maryland	The Effect of the Floor on Thermoplastic Melt Spread Rate in a Fire	BFRL
Tebbe, Amelia	Saint Mary's College of Maryland	Estimating Volumes of Simulated Lung Cancers by B-Spline Modeling	ITL
Reimonenq, Wade	Southern University and A&M College	Efficiency of 35S Promoter PCR Assays for Quantitation of Biotech Maize	CSTL
White, Theodore	State University of New York Binghamton	First Order Reversal Curve Measurements of Magnetic Tunnel Junctions	PL
MacArthur, James	Swarthmore College	Using Interference Lithography to Create Magnetic Nano-Stripes	CNST
Johnson, Tessa	Tulane University	Probing the Underlying Physics of Graphene with Raman Spectroscopy	PL
Ly, Nhieli	University of California Irvine	Influence of Nanoparticles on Short-Term and Long-Term Performances of Polymeric Materials	BFRL
Rowell, Griffin	University of California Santa Barbara	The Normalization of Alanine Dosimeter Films	PL
Lambarqui, Amine	University of District of Columbia	Microfluidic Chips and Microwave-PCR for DNA Amplification	EEEL
Tierney, Kevin	University of Florida	Diagramming the Phase Relations of the CeO_2-Nd_2O_3-Sm_2O_3 System	MSEL/NCNR
Torres, Jr., Carlos Manuel	University of Florida	Green's Functions, Scattering Effects, Impurities…Oh My! Predicting the Behavior of Electrons Confined to Quantum Structures	CNST
Kuruvilla, Sibu	University of Illinois Urbana-Champaign	Modeling of Nanotube Separation in Field Flow Fractionation	MSEL/NCNR
Payson, Grady	University of Iowa	Metric Evaluation and Report Generation for the NIST 2008 Metrics for Machine Translation Challenge (Metrics MATR)	ITL
Aguilar, Izath	University of Maryland Baltimore County	Molecular Electronic Devices	EEEL
Fertig, Derek	University of Maryland Baltimore County	Water Calorimetry and Heat Transport	PL
Jackson, Brandi	University of Maryland Baltimore County	Characterization of Local Mechanical Properties in Epoxy Nanocomposites	BFRL
Jeong, Jeong-O	University of Maryland Baltimore County	Development of Software Tools for Extracting Model Parameters of SiC Power Diodes	EEEL
Schuldenfrei, Andrew	University of Maryland Baltimore County	Observations of the Oxidation of Pentacene Thin Films in Air by Photoluminescence Spectroscopy	CSTL
Serova, Nadezhda	University of Maryland Baltimore County	Non-Linear Polymer Film Thickness Gradients Through Flow Coating	MSEL/NCNR

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Shurupoff, Kimberly	University of Maryland Baltimore County	Large Building Evacuation	BFRL
Sims, Christopher	University of Maryland Baltimore County	Fundamental Interaction Mechanisms of Engineered Nanomaterials with DNA	CSTL
Spiegler, Julian	University of Maryland Baltimore County	An Energy Model of the IAQVG Test House	BFRL
Taylor, Malcolm	University of Maryland Baltimore County	Parallel Covering Array Generation: The Future of Combinatorial Testing	ITL
Birenbaum, Jeffrey	University of Maryland College Park	Optimizing the Nano-Manufacturing of Crystalline Single Electron Transistors	PL
Biser, Dustin	University of Maryland College Park	Development of an Optical Waveform Generator Using Digital Micromirror Devices	PL
Buzek, Olivia	University of Maryland College Park	Inclusion of Parallel Vectors in FiPy	MSEL/NCNR
Cho, Suehyun	University of Maryland College Park	Cheerios Gone Micro!	CNST
Dorsey, Shauna	University of Maryland College Park	Using X-ray Microcomputed Tomography to Assess Cell Adhesion and Proliferation in Polymer Scaffolds	MSEL/NCNR
Feric, Marina	University of Maryland College Park	Manipulating Microstructure to Achieve High Performance Organic Thin Film Transistors	EEEL
Franson, Nicholas	University of Maryland College Park	Flow Table Reference Material	BFRL
Gorbashev, Aleksandr	University of Maryland College Park	Robot Sensor Evaluation and Calibration	MEL
He, Christine	University of Maryland College Park	Facilitating Structure-Based Drug Design: Updating the HIV Structural Database	CSTL
Howell, Marc	University of Maryland College Park	Using Microfluidic Devices to Amplify Small mRNA Samples	CSTL
Hudson, Amy	University of Maryland College Park	"Why Has an Answer to the LBA Problem Been Such a Mathematical Problem?"	ITL
Katz, Shifra	University of Maryland College Park	Edge-Roughness Modeling of Magnetic Nanostructures	MSEL/NCNR
Lane, Hilary	University of Maryland College Park	Combinatorial Synthesis and Characterization of TaCN Composition Spread Metal Gate Electrodes on HfO_2 for Advanced Gate Stacks	MSEL/NCNR
Lau, Christine	University of Maryland College Park	The Effect of Processing on the Magnetic and Structural Properties of Magnetite Nanoparticles	MSEL/NCNR
Le, Donna	University of Maryland College Park	Study and Test the Performance of a Nanopositioner Controller Filter Compensator	MEL
Lee, Timothy	University of Maryland College Park	Chemical Characterization of the Degradation of Poly-3-hexlthiophene (P3HT)	MSEL/NCNR
Li, Song	University of Maryland College Park	Characterization of Z-Axis Non-Linearity in a CD-AFM Scanner	MEL
Liu, Keddy	University of Maryland College Park	Quantitative Performance Evaluation of Navigation Solutions for Mobile Robots	MEL
Luo, George	University of Maryland College Park	A ZigBee Implementation of the IEEE 1451.5 Smart Sensor Network	MEL
MacNeill, Devon	University of Maryland College Park	Fabrication of NanoPatterns by Nanoimprint Lithography	MSEL/NCNR
Martin, Stephanie	University of Maryland College Park	Thermal Imaging Cameras: Testing and Validation of the Standard	BFRL

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Mont, Alexander	University of Maryland College Park	Use of a Computational Fluid Dynamics Model for Fire Protection in Nuclear Power Plants	BFRL
Niarhos, Peter	University of Maryland College Park	Single-Walled Carbon Nanotube Dispersions: A Study of Various Surfactants for Selectivity and Stability	BFRL
Opert, Kelly	University of Maryland College Park	Compartment Fire Experiments for Validation of Advanced Computer Models	BFRL
Raghunandan, Sindhushree	University of Maryland College Park	Characterizing the Assembly of HIV-1 Gag Protein on a Model Membrane Surface	MSEL/NCNR
Robertson, Scott	University of Maryland College Park	Examining the Reliability of the BANG3-PRO Gel as a Three Dimensional Dosimeter	PL
Rose, Cameron	University of Maryland College Park	Expanding e-FITS with Java	ITL
Sailey, Mark	University of Maryland College Park	Implementation of Armstrong's Particle Correction Algorithms in the NIST DTSA-II Microanalysis Software Package	CSTL
Sarvey, Thomas	University of Maryland College Park	Development of a Graphical Interface for Monte Carlo Simulations of Magnetic Crystals	MSEL/NCNR
Shah, Roshan	University of Maryland College Park	Measuring Security Risk of Networks Using Attack Graphs	ITL
Tang, Kathy	University of Maryland College Park	Cell Response to Surface Roughness of Dental Composites	MSEL/NCNR
Wagman, Nicholas	University of Maryland College Park	Modulus Influences on Moisture-Induced Adhesion Loss	BFRL
Ward, Andrew	University of Maryland College Park	An Introduction to Optical Tweezers	MEL/TS
Yang, Minghui	University of Maryland College Park	Improving Measurement and Automation Features of a Electricity Reference Standard	EEEL
Rivera Rodriguez, Axel Y.	University of Puerto Rico Humacao	Principal Components Analysis & Singular Value Decomposition for Automated Angle Measurements	ITL
Fuentes-Martinez, Paul	University of Puerto Rico Inter American University	Characterization of Graphene Ribbons from Liquid Exfoliation of Graphite	MSEL/NCNR
Cortes, Raiza	University of Puerto Rico Mayaguez	The Applicability of a *P(r)* Inversion Method	MSEL/NCNR
Muniz-Mercado, Angelica	University of Puerto Rico Mayaguez	High Resistivity Measurement at High Temperatures for Solar Probes	EEEL
Montalvo-Delgado, Stephanie	University of Puerto Rico Rio Piedras	Measurement of SRM 2461 Standard Casings Using a Nanofocus Confocal Microscope	MEL
Green, Daniel	University of Rochester	Standardizing Voltage Characteristic Measurements of Electroshock Weapons	EEEL
Perl, Emmett	University of San Diego	Through-Barrier Radar Detection and Imaging	EEEL
Jiang, Chong	University of Texas Austin	Nanocapacitance Measurement	EEEL
Muniez, Jr., Ike	University of Texas Pan American	Surface Chemistry Parameters of Environmental Isolates of *Bacillus Thuringiensis* Spores	CSTL
Feight, Jarod	University of Wisconsin Stout	Nano-Scale Milling with a Helium Ion Microscope	MEL
Glazer, Matthew	Virginia Polytechnic Institute and State University	Triplet Correlations in Magnetic Flux Line Lattices within Elemental Type II Superconductors	MSEL/NCNR
Mayer, Brian	Virginia Polytechnic Institute and State University	Prototype for Simulation-Based Testing of Shop Floor Scheduling	MEL
Shemonski, Nathan	Washington University St. Louis	Building a Scanning Kelvin Force Microscope Feedback Loop	EEEL

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Freedman, Willa	Wellesley College	Evaluation of the Effects of Cocktail Composition and Instrument Dependence on the Activity Determination of ^{63}Ni by Liquid-Scintillation-Based Efficiency Tracing with ^{3}He Standards	PL
Boutin, Alexander	Western New England College	Motion Behavior of a Stagger-Tuned Piezoelectric Shaker	MEL
Purdum, Kathryn	Western New England College	Microscopic Robotics: Characterization of How They Move	EEEL
Cahn, Jackson	Whitman College	Protein Adsorption Affects Osteoblast-Glass Adhesion Strength as Measured by Colloidal Probe Atomic Force Microscopy	MSEL/NCNR
Lontz, Timothy	Worcester Polytechnic Institute	Developing Virtual Fire Fighter Trainers	BFRL
Tong, Long	Worcester Polytechnic Institute	New Measurement Technique for Characterizing the Anisotropy of Brachytherapy Seeds	PL

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